San Gabriel-Castaic Connection
A Critical Landscape Linkage *in* Los Angeles County

1. SITE NAME

The San Gabriel-Castaic Linkage is a landscape level connection that serves two expansive core areas. The majority of both the San Gabriel and Castaic ranges are included in the National Forest system, together forming the Angeles National Forest; several existing conservation investments exist in the linkage (Attachment 1). The proposed CAPP is part of a highly collaborative partnership involving representatives from the Department of Fish and Game, U.S. Fish and Wildlife Service, U.S. Forest Service, Bureau of Land Management, Southern California Wetlands Recovery Project, Caltrans, Regional Water Quality Control Board, Los Angeles County DPW Watershed Division, Rivers and Mountains Conservancy, Santa Monica Mountains Conservancy, The Nature Conservancy, Trust for Public Land, Friends of the Santa Clara River, and South Coast Wildlands, among others. Multiple agencies and organizations are expected to implement the proposed CAPP. As such, various partners will acquire different parts of the CAPP and lands acquired will have multiple designations.

2. SUMMARY

Habitat loss and fragmentation are the leading threats to biodiversity, both globally and in southern California. Efforts to combat these threats must focus on conserving well-connected networks of large wildland areas where natural ecological and evolutionary processes can continue operating over large spatial and temporal scales—such as top-down regulation by large predators, and natural patterns of gene flow, pollination, dispersal, energy flow, nutrient cycling, inter-specific competition, and mutualism. Adequate landscape connections will thereby allow these ecosystems to respond appropriately to natural and unnatural environmental perturbations, such as fire, flood, climate change, and invasions by alien species. The San Gabriel–Castaic Linkage is one of 15 priority linkages identified by the South Coast Missing Linkages Project as critical for preserving ecosystem processes in the South Coast Ecoregion

The principle goal of the proposed CAPP is to preserve essential open space and viable connections for wildlife movement between two core habitat areas, the San Gabriel Mountains and the Castaic Ranges (including the Sierra Pelona), both part of the Angeles National Forest managed by the U.S. Forest Service. The land between these two core habitat areas encompasses a unique ecological transition zone between coastal and desert habitats. Coastal sage scrub and chaparral blankets the hillsides in the western part of the planning area, with dense coast live oak woodlands in canyons, and high quality riparian scrub and woodlands at lower elevations. The easternmost part of the linkage has a strong desert influence; dominated by desert scrub, with scattered juniper and Joshua tree woodlands (Penrod et al. 2004). While a system of mostly unaltered natural hydrological features currently supports these vegetation types in the upper watershed, the demand for housing and infrastructure development poses a serious threat to this valuable natural resource and to wildlife movement between core habitat areas.

The Santa Clara River is a prominent feature of the linkage, draining 3108 km^2 (1200 mi^2) of the San Gabriel, Castaic, Santa Susana, and Sierra Madre mountains and cutting transversely through the linkage along Soledad Canyon. As one of the last free flowing natural riparian systems left in southern California, the Santa Clara River supports a diversity of aquatic, semi-aquatic, and terrestrial organisms. The essential habitats in the upper watershed and headwater streams in the planning area are largely intact, providing breeding sites, traveling

routes, and other resources for wildlife; natural flood control; recharge of groundwater basins; nutrient cycling; and helping to sustain the river to its estuary in Ventura county (Meyers et al. 2003; Penrod et al, 2004). Many species that depend on low-elevation habitats are now federally and or state-listed as endangered, threatened, or sensitive, many of which have been recorded or have the potential to occur within the vicinity of the planning area (CDFG 2003).

The proposed CAPP would secure a functional landscape level connection between the San Gabriel and Castaic core areas and help to ensure the ecological integrity of areas already protected in the linkage. There are a number of existing conservation investments (e.g., BLM, County Parks, City of Santa Clarita, etc.) in the linkage, covering 1,514 acres, which are protected from habitat conversion. The proposed CAPP encompasses a total of 8,697 acres on 392 parcels, which are targeted for acquisition or conservation easements in Los Angeles County. The Conceptual Area is absolutely critical for establishing a protected area network for the South Coast Ecoregion.

3. GEOGRAPHIC LOCATION AND DESCRIPTION

The proposed CAPP would secure a functional landscape level connection between the San Gabriel and Castaic core areas and help to ensure the ecological integrity of areas already protected in the linkage. The linkage spans a distance of roughly 6-10 miles between the Saugus and Tujunga Ranger Districts of the Angeles National Forest. The Conceptual Area is roughly bound by Spring Canyon to the west and Hughes Canyon to the east. A network of creeks drain the land within the proposed CAPP, flowing into the Santa Clara River, which runs through the southern part of the CAPP boundary. Topography within the Conceptual Area is mixed with elevations ranging from 3,200 to 4,400 feet (Attachment 2).

The proposed CAPP encompasses a total of 8,697 acres (3,520 ha), which are targeted for acquisition or conservation easements. There are a number of existing conservation investments in the linkage (i.e., BLM, LA County Department of Parks and Recreation, City of Santa Clarita), covering 1,514 acres (613 ha), which are protected from habitat conversion (Attachment 1). The Pacific Crest Trail, a national scenic treasure, transverses roughly north south through the linkage. In addition, a few utility districts administer land within the boundary of the proposed CAPP, covering roughly 187 acres (76 ha). Vegetation management within the utility corridors has minimal effect on the native vegetation and is consistent with wildlife movement. Moreover, restrictions to development adjacent to the transmission corridor contribute to the conservation of open space within the area. The Metropolitan Transportation Authority also administers 136 acres (55 ha) of land along the railway.

Land targeted for acquisition or conservation easements in the San Gabriel-Castaic Linkage CAPP encompasses a total of 392 parcels, represented by 226 landowners, 31 of which own over 80 acres within the Conceptual Area. In many instances, multiple large parcels are owned by a particular landowner, often in strategic locations for linking together existing protected areas in the linkage. The 3 largest landholders in the proposed CAPP are the United States Borax and Chemical Corporation (372 acres), Calmat Company (585 acres), and Resolution LLC (i.e., Rio Dulce Ranch) with 593 acres. Please see Appendix A for geographical location and descriptive information (e.g., APN, Acres, Hectares, Township, Range, and Section) for each parcel.

The closest town to the proposed CAPP is the community of Aqua Dulce, which comes under the jurisdiction of Los Angeles County. The town is situated off Highway 14 approximately 8-miles east of the Highway 14/Golden State (Interstate 5) Freeway intersection. Current land uses in Aqua Dulce include rural residential (minimum lot size of 2-5-acres) and some limited

commercial space. Typical developments are comprised of single-family residences, stables or barns, access driveways and fencing. Fencing, in particular, may pose a challenge to wildlife movement. It is hoped that outreach to the community and to Los Angeles County Department of Regional Planning will guide future development that will limit the construction of any additional barriers to wildlife movement within the CAPP area. Local area residents favor the preservation of the rural character of the landscape and it is expected that the community will support appropriate setbacks and conservation easements.

4. PURPOSE OF ACQUISITION

The primary purpose of the proposed acquisitions is to secure the San Gabriel-Castaic Linkage, a Significant Natural Area (20), which provides live-in and move-through habitat for countless species associated with these ranges. The proposed acquisitions also promote recovery of threatened and endangered animals (01) and plants (19), including unarmored three-spine stickleback, arroyo chub, San Diego coast horned lizard, and slender-horned spineflower, by protecting the habitats these species depend upon (02, 03, 06, 21, 27, 37, 38, 41). Please see Appendix B for a detailed breakdown of Purpose of Acquisition (POA) codes by parcel.

In an analysis that identified “irreplaceable” places for preventing species extinctions (Stein et al. 2000), the South Coast Ecoregion stood out as one of the six most important areas in the United States (along with Hawaii, the San Francisco Bay Area, Southern Appalachians, Death Valley, and the Florida Panhandle). The ecoregion is part of the California Floristic Province, one of 25 global hotspots of biodiversity, and the only one in North America (Mittermeier et al. 1998, Mittermeier et al. 1999; Penrod et al, 2004). The significance of the proposed CAPP in the context of the ecoregion is great. By preserving a wildlife connection between the two parts of the Angeles National Forest, two essential core habitats, the proposed CAPP will contribute to biodiversity and species preservation. In its analysis of critical linkages in Southern California, the South Coast Missing Linkages Project included the proposed CAPP in its list of the top 15 priority linkages based upon biological importance and threat of development that would sever connectivity. South Coast Wildlands recently published a report titled the San Gabriel Mountains-Castaic linkage (Appendix C), which provides detailed analyses of the biological resources within the project area and outlines the results of several spatial analyses (i.e., landscape permeability, habitat suitability, patch size & configuration) that support the goals of the proposed CAPP.

The San Gabriel-Castaic Linkage is extremely diverse, supporting 20 distinct natural communities (Table 1). Habitat types in the project area include Coastal sage scrub, chaparral, coast live oak woodlands in canyons, and high quality riparian scrub and woodlands at lower elevations. To the east of the proposed CAPP there is a shift to a xeric landscape characterized by desert scrub, with scattered juniper and Joshua tree woodlands. Among the sensitive natural communities that occur in the project area are alluvial fan sage scrub, southern cottonwood willow riparian forest, southern riparian scrub, southern sycamore alder riparian, freshwater marsh, coast live oak riparian forest, vernal pool, mainland holly-leaved cherry woodland, valley needlegrass grassland, and coastal sage scrub. These habitats are among the rarest and most sensitive ecosystem types in the United States (Penrod et al. 2004). Conservation of the targeted parcels will contribute to the preservation of these communities. Please see Appendix D for a summary of an analysis of vegetation types by parcel.

While each of the vegetation communities is important in its own right, it is also important that the natural hydrology of the CAPP area remain intact. Therefore riparian and associated buffer zones rank highly. Many of the tributary drainages are in an undisturbed state. However, some parcels within the flood plain of the Santa Clara River have been impacted by development and

would therefore benefit from conservation and restoration. This restoration would have an added benefit of expanding habitat for several special status species, including the unarmored three-spined stickleback (*Gasterosteus aculeatus williamsoni),* an endangered species found within the proposed CAPP area. Two other native fish are also present in the planning area, the federally threatened Santa Ana sucker (*Catostomus santaanae*) and the arroyo chub (*Gila orcutti*) also occurs here (Penrod et al. 2004).

Table 1. Vegetation Types in the Proposed CAPP		
CalVeg Description	**Area (acres)**	**Area (hectares)**
Herbaceous Communities (1%)		
Annual Grass/Forbs	81.60	33.02
Scrub Communities (68%)		
Alluvial Fan Sage Scrub	9.37	3.79
Sumac (Rhus) Sage Scrub	11.06	4.48
Basin Sagebrush	111.25	45.02
Encelia Sage Scrub	127.42	50.97
Buckwheat (White Sage) Sage Scrub	1,376.94	557.23
Desert Buckwheat Scrub	1,908.91	772.51
California Sagebrush	2,385.92	965.55
Chaparral Communities (25%)		
Birchleaf Mountain Mahogany Chaparral	0.74	0.30
Mixed Soft Scrub Chaparral	41.24	16.69
Ceanothus Mixed Chaparral	85.05	34.42
Chamise Chaparral	311.10	125.90
Semi-Desert Chaparral	795.56	321.95
Lower Montane Mixed Chaparral	912.48	369.27
Woodland Communities (1%)		
California Juniper Woodland	17.49	7.08
Coast Live Oak Woodland	57.09	23.10
Riparian Communities (2%)		
Baccharis Riparian Scrub	26.83	10.86
Scalebroom	32.05	12.97
Fremont Cottonwood Riparian Forest	144.76	58.58
Other Land Cover (3%)		
Agricultural	21.77	8.81
Barren/Rock	117.58	47.58
Urban/Developed	119.70	48.44
TOTAL	**8,696.93**	**3,519.52**

The California Natural Diversity Database (CDFG 2004) was queried to identify special status species with the potential to occur in the Conceptual Area. The following quads were evaluated in the analysis: Aqua Dulce, Green Valley, Sleepy Valley, Ritter Ridge, Acton, Mint Canyon, San Fernando, Sunland, and Condor Peak. There are 231 recorded occurrences of listed or sensitive species and communities in the planning area, representing 45 different elements. A total of 18 of these recorded occurrences occur on target parcels with the Conceptual Area. Please see Appendix E for the California Natural Diversity Database report and Appendix B for parcel level information relative to special status species.

Because the primary goal of the CAPP is to address habitat connectivity, the preservation of landscape conditions that support wildlife movement are fundamentally important. The configuration of the proposed CAPP is based upon a number of factors, including:

- Connectivity between the Tujunga and Saugus Districts of the Angeles National Forest
- Concurrence with landscape permeability analyses to the proposed movement corridor
- Spatial configuration of existing protected open space
- Presence of habitat types of interest to the Department (e.g. riparian, alluvial sage scrub)
- Recorded occurrences of listed and sensitive species
- Contribution to preservation of natural hydrological functions
- Existing crossing structures under Highway 14

The overall configuration of the proposed CAPP evolved by first using these criteria as a basis and then adding parcels as comments were received and as new information emerged. Based upon the landscape permeability analyses conducted by the South Coast Missing Linkages Project (Penrod et al. 2004), certain parcels and vegetation groups were ranked higher than others. However other variables such as willing sellers, leveraging of funds and adjacency to existing protected land will obviously be considered as implementation opportunities arise.

The current alignment is intended to meet the above listed criteria but also to provide for flexibility in the event that certain parcels in the proposed CAPP become unavailable for some reason or another. Acquisitions of properties by USFS and NPS for the Pacific Crest Trail realignment project suggest exploration of additional opportunities for building even greater flexibility into the CAPP. This realignment somewhat follows the eastern branch of the Linkage Design developed by the South Coast Missing Linkages Project (Attachment 3). These areas will be added as an amendment in the near future, subsequent to the submission of the proposed configuration.

4.1 Local and Statewide Importance: The proposed San Gabriel–Castaic Connection meets all 10 of the Department's criteria for local, regional, and statewide significance.

4.1.1 Wintering, Breeding, or Migratory Habitat: The San Gabriel–Castaic Range Connection provides critical wintering, breeding, and migratory habitat for numerous species. Some winter residents in the linkage include Ruby-crowned kinglet (*Regulus calendula*), Hermit thrush (*Catharus guttatus*), American robin (*Turdus migratorius*), and Yellow-rumped warbler (*Dendroica coronata*).

The linkage supports breeding habitat for countless species, including many habitat specialists, such as the arroyo toad, arroyo chub, unarmored three-spine stickleback, and western pond turtle. Nesting habitat for several special status bird species is also present in the linkage, supporting species such as the golden eagle (*Aquila chrysaetos*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), Long-eared owl (*Asio otus*), and Burrowing owl (*Athene cunicularia*). The linkage also provides roosting habitat for several sensitive bat species, such as the Pallid bat *(Antrozous pallidus),* Greater western mastiff bat (*Eumops perotis californicus*), and the Fringed myotis bat (*Myotis thysanodes*).

The linkage also provides habitat for several migratory songbirds, including the endangered southwestern willow flycatcher (*Empidonax traillii extimus*). Other migratory birds that may utilize habitats in the linkage include species such as Yellow warbler (*Dendroica petechia brewsteri*)*,* Orange-crowned warbler (*Vermivora celata*), and Wilson's warbler (*Wilsonia pusilla*), Yellow-breasted chat (*Icteria virens*)*, and* Summer tanager (*Piranga rubra*).

4.1.2 Extremely Rare Species or Habitats: Many native species that depend on low elevation habitats are now federally and or state listed as endangered, threatened, or sensitive, many of which have the potential to occur in the proposed CAPP (CDFG 2003). All remaining naturally occurring populations of the endangered unarmored three-spine stickleback (*Gasterosteus aculeatus williamsoni*) are in the upper Santa Clara River watershed, in San Francisquito Canyon, Soledad Canyon, and Escondido Canyon (Warburton and Fisher 2002). Two other native fish are also present in the planning area, the Santa Ana sucker (*Catostomus santaanae*) and the arroyo chub (*Gila orcutti*). The planning area is also home to several listed and sensitive amphibians and reptiles, including the endangered California red-legged frog (*Rana aurora draytonii*) and arroyo toad (*Bufo microscaphus californicus*), as well as Western spadefoot toad (*Scaphiopus hammondii*), southwestern pond turtle (*Clemmys marmorata*), and the San Diego horned lizard (*Phrynosoma coronatum blainvillei*). Several listed or sensitive migratory songbirds have been recorded, including the endangered southwestern willow flycatcher (*Empidonax traillii extimus*). Species reliant on coastal sage scrub habitats, such as the coastal California gnatcatcher (*Polioptila californica*), may also utilize habitat in the linkage. Several special status plants also occur in the proposed CAPP. For instance, a population of the federally and state endangered slender-horned spineflower (*Dodecahema leptoceras*) occurs in alluvial fan sage scrub habitat in Bee Canyon. In addition to conserving habitat for over a dozen special status species, the linkage provides live-in and move-through habitat for numerous other native species.

The proposed CAPP also encompasses several natural communities designated as sensitive by the Department, including alluvial fan sage scrub, southern cottonwood willow riparian forest, southern riparian scrub, southern sycamore alder riparian, freshwater marsh, coast live oak riparian forest, mainland holly-leaved cherry woodland, valley needlegrass grassland, and coastal sage scrub. These habitats are truly among the rarest and most sensitive ecosystem types in the United States.

4.1.3 Excellent Representative Examples of Specific Species or Habitats: A population of the federally and state endangered slender-horned spineflower occurs in alluvial fan sage scrub habitat in Bee Canyon, which is designated as a sensitive natural community by the Department. Excellent examples of several sensitive riparian communities occur in the gallery forest of the upper Santa Clara River in Soledad Canyon. These riparian and aquatic habitats support several special status species clinging to existence there, such as the unarmored three-spine stickleback, arroyo chub, and the arroyo toad.

Approximately 48% (4,168 acres) of the land targeted for acquisition or conservation easements is covered with habitats of interest to the Department. Coastal Sage (POA code 41) occurs on 44% of the targeted parcels, covering 3,825 acres. Riparian habitats (POA code 03) occur on 2% of the targeted parcels, covering 204 acres. Grassland habitats (POA code 21) occupy .09% of the parcels, covering 82 acres. Oak Woodland (POA code 27) occurs on .07% of the parcels, covering 57 acres. The target parcels contain excellent examples of several unique communities that support a diversity of species. Please see Appendix B for a list of POA codes by parcel.

4.1.4 Essential Habitat Linkages: Movement is essential to wildlife survival, whether it be the day-to-day movements of individuals seeking food, shelter, or mates, dispersal of offspring (e.g., seeds, pollen, fledglings) to new home areas, or migration of organisms to avoid seasonally unfavorable conditions (Forman 1995). Movements can lead to recolonization of unoccupied habitat after environmental disturbances, the healthy mixing of genes among populations, and the ability of organisms to respond or adapt to environmental stressors. Establishing connections among natural lands has long been recognized as important for sustaining natural

ecological processes and biological diversity (Noss 1987, Harris and Gallagher 1989, Noss 1991, Beier and Noss 1998, Beier and Loe 1992, Noss 1992, Beier 1993, Forman 1995, Crooks and Soulé 1999, Soulé and Terborgh 1999, Penrod et al. 2001, Crooks et al. 2001, Tewksbury et al. 2002, Forman et al. 2003, Penrod et al. 2004).

The San Gabriel-Castaic Linkage is one of 15 priority linkages identified by the South Coast Missing Linkages Project as critical for preserving ecosystem processes in the South Coast Ecoregion (Appendix C). Partners in this region-wide effort include, but are not limited to: US Forest Service, National Park Service, California State Parks, The Resources Agency California Legacy Project, California State Parks Foundation, SDSU Field Station Programs, Zoological Society of San Diego, Santa Monica Mountains Conservancy, The Nature Conservancy, Conservation Biology Institute, the Wildland Conservancy, and South Coast Wildlands. The protection of these 15 landscape linkages would establish a regional conservation network of ecologically intact wildlands.

Table 2. Regional ecologists selected 15 focal species for the San Gabriel-Castaic Linkage

Common Name	Scientific Name
Mammals	
Mountain lion	*Puma concolor*
American badger	*Taxidea taxa*
Mule deer	*Odocoileus hemionus*
Pacific kangaroo rat	*Dipodomys agilis*
Birds	
California thrasher	*Toxostoma redivivum*
California spotted owl	*Strix occidentalis occidentalis*
Burrowing owl	*Athene cunicularia*
Acorn woodpecker	*Melanerpes formicivorus*
Amphibians & Reptiles	
Monterey salamander	*Ensatina eschscholtzii eschscholtzii*
California mountain kingsnake	*Lampropeltis zonata*
Two-striped gartersnake	*Thamnophis hammondii*
Western pond turtle	*Clemmys marmorata*
Invertebrates	
Bear sphinx moth	*Arctonotus lucidus*
Plants	
Scalebroom	*Lepidospartum squamatum*
California Juniper	*Juniperus californica*

A habitat connectivity workshop was held in 2002 to lay the biological foundation for planning in the linkage. The workshop engaged over 90 biologists and planners to identify focal species from multiple taxonomic groups that are sensitive to habitat fragmentation and designate lands needed to conserve linkage function. Workshop participants selected 15 focal species (Table 2). A priority linkage area was identified between the Saugus and Tujunga Ranger Districts of the Angeles National Forest. The South Coast Missing Linkages project analyzed landscape conditions in the CAPP area to identify those areas necessary to accommodate continued movement of selected focal species through this landscape. Several spatial analyses were conducted (i.e., habitat suitability, patch size and configuration, and landscape permeability) to identify the final Linkage Design.

Ensuring habitat connectivity across existing and proposed transportation corridors will be a major element for mitigation objectives as transportation expansion projects emerge. Currently, the most significant barrier to wildlife movement is Highway 14. The Upper Santa Clara Biodiversity Working Group has toured the proposed CAPP with representatives from Caltrans to discuss potential mitigation projects for transportation improvement projects in the region. Such wildlife crossing structures, or ecological infrastructure, have been successfully constructed in the United States and Europe (see http://www.wildlifecrossings.info/beta2.htm for complete review of crossing structures and their function). Appropriate management of the

parcels in the vicinity of crossing structures may be necessary to “funnel” species movement through the area.

4.1.5 Critical Buffer Zones: For the Linkage to remain a viable avenue of travel for plants and animals, habitat quality must be preserved even as surrounding areas develop. Human activities in neighboring areas can have undesirable effects on protected areas. These edge effects, including artificial lighting, nest predation by species supported by human environments, use of irrigation and pesticides, pet ownership, and vegetation clearance, reduce plant and animal populations that live in adjacent natural areas (Churcher and Lawton 1987, Murcia 1995, Hall et al. 2000, Norton 2002). In addition, fire safety concerns and insurance requirements at the wildland urban interface can cause homeowners to clear vegetation up to 61 m (200 ft) around their homes (Longcore 2000). The Linkage was designed to buffer against edge effects.

In areas of the Linkage with streams, upland habitat protection is needed to prevent the degradation of aquatic habitat quality. Contaminants, sediments, and nutrients can reach streams from distances greater than 1 km (0.6 mi)(Maret and MacCoy 2002, Scott 2002, Naicker et al. 2003), and fish, amphibians, and aquatic invertebrates often are more sensitive to land use at watershed scales than at the scale of narrow riparian buffers (Goforth 2000, Fitzpatrick et al. 2001, Stewart et al. 2001, Wang et al. 2001, Scott 2002, Willson and Dorcas 2003). The target parcels are needed to secure linkage function and include appropriate buffer zones to insure that adjacent impacts do not impede movements of organisms through the linkage.

The Linkage Design must also allow natural processes of disturbance and subsequent recruitment to operate with minimal constraints from adjacent urban areas. The Linkage was designed to be sufficiently wide, such that the temporary devastation caused by fires, floods and other natural processes would not affect all habitats in the linkage simultaneously.

4.1.6 Species or Habitats That Are Experiencing Significant Declines or Threats Throughout Their Statewide Distribution: Many native species that occur, or have the potential to occur, in the proposed San Gabriel-Castaic Linkage are undergoing significant declines. For instance, all remaining naturally occurring populations of the endangered unarmored three-spine stickleback (Gasterosteus aculeatus williamsoni) are in the upper Santa Clara River watershed, in San Francisquito Canyon, Soledad Canyon, and Escondido Canyon (Warburton and Fisher 2002).

Several natural communities in the linkage are also undergoing regional and statewide declines, such as riparian, grassland, oak woodland, and coastal sage habitats. For instance, despite their importance to biological communities, over 90% of the historic wetland and riparian vegetation in Southern California has been eliminated or severely altered by urban and agricultural activities (Peters and Noss 1995). Coastal watersheds, in particular, have suffered due to dams, diversions, channelization, development, livestock grazing, and land disturbance (Dennis et al. 1984, Bell 1997). This extensive loss of habitat has resulted in declines in wildlife and plant populations that depend wholly or in part on riparian systems (Faber et al. 1989). The proposed CAPP would protect 204 acres of riparian and aquatic habitats. The Conceptual Area would also protect 57 acres of oak woodlands, 82 acres of grasslands, and 3,825 acres of coastal sage scrub habitats.

4.1.7 Species With Highly Restricted Distributions Within the Region or State: Several species with highly restricted distributions occur within the proposed CAPP, such as the slender-horned spineflower. The spineflower is an endemic species restricted to alluvial fans on

the coastal side of the Transverse and Peninsular Ranges in Los Angeles, Riverside and San Bernardino counties.

The Slender-horned spineflower has the distinction of being the most critically endangered plant species in southern California (Croft 1989). The species is threatened by development encroaching into the floodplain, sand and gravel mining, domestic livestock grazing, and invasion of exotic plants (USFWS 1987), as well as, flood control projects, trash dumping, trampling, and off-road vehicles (Krantz 1984, USFWS 1987, Croft 1989, Hickman 1993, Stephenson and Calcarone 1999, California Native Plant Society 2001, USFWS 2001, USFS 2002). It is believed to be vulnerable to extirpation throughout its range (California Native Plant Society 2001, USFS 2002). Even on public land, such as the San Bernardino National Forest, populations are declining (Stephenson and Calcarone 1999, USFS 2002). The spineflower was listed as a federally endangered species in 1987, and is also state listed as endangered (USFWS 1987, Croft 1989, CDFG 2003).

4.1.8 Critical Parts for Maintaining Ecosystem Function: The San Gabriel-Castaic Linkage maintains essential ecosystem functions, such as top-down regulation by large predators, gene flow, natural patterns and mechanisms of pollination and seed-dispersal, natural competitive or mutualistic relationships among species, resistance to invasion by alien species, and prehistoric patterns of energy flow and nutrient cycling (Penrod et al. 2004).

For instance, protection of the San Gabriel-Castaic Linkage will help to maintain populations of the largest remaining carnivore in the Ecoregion, the mountain lion. In a population modeling study, Penrod et al. (2004) showed that neither the San Gabriel Mountains nor the Castaic Ranges (i.e., protected areas on the Angeles National Forest) were large enough to sustain mountain lion populations, illustrating the importance of maintaining habitat connectivity between these ranges (Appendix C). Genetic exchange between populations is necessary to prevent the extirpation of mountain lions in both mountain ranges. The loss of this top predator in the food chain is expected to have a “trickle down” effect through the ecosystem, altering predator-prey and herbivore-plant interactions throughout the region.

4.1.9 Critical Habitat for Species of High Importance to the Department (listed, game, wide-ranging species): Although the proposed CAPP doesn’t encompass any designated critical habitat, 4 listed species: Riverside fairy shrimp (*Streptocephalus woottoni*), arroyo toad (*Bufo microscaphus*), red-legged frog (*Rana aurora*) and California gnatcatcher (*Polioptila californica californica*), have designated habitat in the vicinity. The proposed San Gabriel-Castaic Linkage also provides live-in and move-through habitat for several game species (e.g., Mule deer, California quail), providing the exchange of genetic material necessary to maintain viable populations in core areas, where hunting is permitted. Protection of the linkage is also essential for species such as Mountain lion, American badger, and Mule deer, who have expansive spatial requirements and require functional habitat connectivity between subpopulations in order to persist (Penrod et al. 2004).

4.1.10 Lands Critical for Successfully Implementing Landscape or Regional Conservation Plans: Lands targeted for acquisition or conservation easements in the proposed CAPP support implementation of several regional efforts by conserving large-scale ecosystem processes across the landscape. For instance, the Southern California Mountains and Foothills Assessment (Stephenson and Calcarone 1999), a technical report published by the Pacific Southwest Research Station of the US Forest Service, identifies the area covered by the proposed CAPP as a “critical connectivity zone” between the Saugus and Tujunga Ranger Districts of the Angeles National Forest. A revision to the Los Angeles County General plan identifies Soledad Canyon as a Significant Ecological Area (SEA) and an important movement

corridor. This designation requires special review for any proposed development in the area and it is hoped, in response to comments by advocates, that the SEA will extend to cover a larger area of the proposed CAPP based upon comments submitted to Los Angeles County Department of Regional Planning. Other significant land managers in the area include the Bureau of Land Management (BLM) and USFS. Land holdings by these agencies can greatly assist with implementing the goals of the CAPP. BLM has been petitioned to dedicate parcels in the proposed CAPP area for conservation purposes and USFS and NPS are currently pursuing acquisition of parcels for the Pacific Crest Trail realignment project in the eastern part of the CAPP. Securing the San Gabriel-Castaic Linkage is also critical for successfully implementing landscape level conservation plans, such as South Coast Missing Linkages, an ambitious Ecoregion wide project that complements a variety of existing planning efforts.

4.2. Viability, habitat condition, and contribution to Department's planning efforts: For the Linkage to remain a viable avenue of travel for plants and animals, habitat quality must be preserved even as surrounding areas develop. The Linkage was designed to maintain its viability over time. The Linkage is intended to: 1) provide live-in and move-through habitat for multiple species; 2) support metapopulations of smaller species; 3) ensure the availability of key resources; 4) buffer against edge effects; 5) reduce contaminants in streams; 6) allow natural processes to operate with minimal constraints from adjacent urban areas; and 7) allow species and natural communities to respond to climatic changes (Penrod et al. 2004). The proposed San Gabriel-Castaic Linkage is expected to ensure the viability of existing conservation investments in the planning area in perpetuity.

The proposed San Gabriel-Castaic Linkage covers an expansive area of natural habitats that are contiguously distributed between 2 significant blocks of protected habitat (i.e., Saugus and Tujunga Districts of Angeles National Forest). The proposed CAPP encompasses a diversity of natural communities, ranging from coastal to desert habitats. With the headwaters of all major streams and rivers originating in the Forest, the viability and habitat condition of riparian and aquatic habitats in the proposed CAPP are relatively high.

Although intact natural vegetation comprises most of the CAPP, rural residential development covers roughly 1% of its area. Initiating habitat restoration projects and land stewardship programs will help ensure functional habitat connectivity between the San Gabriel and Castaic Ranges. The U.S. Fish and Wildlife Service Partners for Fish & Wildlife Program supplies funds and technical assistance to landowners who want to restore and enhance wetlands, native grasslands, and other declining habitats, to benefit threatened and endangered species, migratory birds, and other wildlife. This program may be helpful in restoring habitat on private lands in the linkage. Early indications from the City of Santa Clarita are that mitigation projects will be directed to the proposed CAPP area. In addition to this, grant funding was recently approved for an outreach campaign in the upper watershed to promote the goals of conservation and preservation of natural resources. Discussions with the local community to date indicate strong support for these goals. This dual strategy, outreach and siting of mitigation projects will greatly assist restoration and preservation of the targeted parcels.

The proposed San Gabriel-Castaic Linkage contributes significantly to the Department's planning efforts. The CAPP design preserves habitat types of interest to the Department that support special status species, and leverages connectivity to existing publicly owned land, which is consistent with conservation and biodiversity goals of both the Wildlife Conservation Board and the Department of Fish and Game.

4.3 Site Diversity: The San Gabriel-Castaic Linkage is one of 15 critically important landscape linkages that must be conserved if ecological and evolutionary processes that promote genetic

diversity, species diversity, habitat diversity, and landscape diversity are to be maintained in the South Coast Ecoregion. The goal of linkage conservation planning is to identify specific lands that must be conserved to maintain or restore functional connections for all species or ecological processes of interest, generally between two or more protected core habitat areas (Penrod et al. 2004). The proposed CAPP is designed to achieve this goal. The linkage is an excellent example of functional diversity, providing both live-in and move-through habitat for countless native species, and allowing natural processes to operate in a semblance of their natural patterns. The Conceptual Area is absolutely critical for establishing a protected area network for the South Coast Ecoregion.

Existing or planned regional planning efforts to protect wildlife resources: A variety of planning efforts addressing the conservation and use of natural resources are currently underway in the Linkage Design area. In this section, we provide information on planning efforts, agencies, and organizations in the region that may represent potential collaborative opportunities for conserving the San Gabriel – Castaic Linkage. While this list is not exhaustive, it is meant to provide a starting point for persons interested in becoming involved in preserving and restoring linkage function.

Antelope Valley Trails, Recreation and Environmental Council: The primary goal of AVTREC is to create a system of interlinking trails for the entire Antelope Valley. AVTREC drafted a Master Trails Plan for the Antelope Valley, which ties into the Pacific Crest Trail. The council seeks to preserve the natural environment, create wildlife corridors and include equestrians, hikers and bicyclist in the Master Trails Plan. Working with public agencies and other groups, AVTREC has already secured 90 miles of trails from Leona Valley to Acton in the North County Trail System. AVTREC realizes trails are not easily established once highways, housing developments and commercial centers are in place. For more information on AVTREC, visit http://www.avtrec.av.org.

Arundo Task Force: The Ventura County and Los Angeles County task forces coordinate Arundo removal and control efforts. The Ventura Resource Conservation District is spearheading the Upper Santa Clara River Watershed Arundo Donax and Tamarisk Eradication Program funded through Proposition 13. This long-term project will map infested areas, monitor removal efforts, and conduct outreach to help restore watershed integrity, improve facultative filtration, remove large trash components in stream runoff, and improve groundwater recharge. For more information: www.swrcb.ca.gov/rwqcb4/html/programs/nps/prop13_contract.html.

Bureau of Land Management: BLM sustains the health, diversity and productivity of the public lands for the use and enjoyment of present and future generations. BLM owns several key parcels in the Linkage Design Area. Their South Coast Resource Management Plan designates all BLM parcels in the San Gabriel-Castaic Linkage as “Land Available for Transfer,” presumably to the US Forest Service (BLM 1996). A revised Resource Management Plan is expected in the coming years that may establish acquisition priorities in the Linkage Design area. For more information on lands administered by the BLM, visit http://www.ca.blm.gov.

Bureau of Reclamation: Reclamation's Southern California Area Office (SCAO) is responsible for water conservation, reclamation and reuse projects to enhance water management practices throughout southern California. Reclamation is undertaking a collaborative effort with local entities to develop an effective water quality monitoring plan in the watershed that will accurately identify impaired water bodies (pursuant to section 303(d) of the Clean Water Act), support the development of water quality recovery plans (Total Maximum Daily Load plans), and estimate the assimilative capacity for nutrients in the Santa Clara River system. Reclamation will also

oversee the restoration of the existing mining operation in the Linkage Design once operations have ceased. For more details, visit http://www.usbr.gov/lc/region/scao/sccwrrs2.htm.

***California Department of Transportation*:** CalTrans strives to achieve the best safety record in the nation, reduce traveler delays due to roadwork and incidents, deliver record levels of transportation system improvements, make transit a more practical travel option, and improve the efficiency of the transportation system. CalTrans representatives have attended each of the South Coast Missing Linkages workshops and are eager to spend their mitigation dollars on the most important linkage areas; they recently proposed building a wildlife overpass over SR-118. In February 2003, CalTrans started removing pavement from the Coal Canyon interchange on SR 91 in Orange County and transferred the property to California State Parks expressly to allow wildlife movement between the Santa Ana Mountains of the Cleveland National Forest and Chino Hills State Park. To find out more about the innovative plans being developed by Caltrans, visit their website at http://www.dot.ca.gov.

California State Parks: California State Parks provides for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation. The Department is actively engaged in the preservation of the State's rich biological diversity through their acquisition and restoration programs. Ensuring connections between State Park System wildlands and other protected areas is one of their highest priorities. CSP is involved in the Coal Canyon habitat connection restoration project to preserve mountain lion movement under SR 91 at the north end of the Santa Ana Mountains. CSP co-sponsored the statewide Missing Linkages conference and is a key partner in the South Coast Missing Linkages effort. For more information, visit their website at http://www.parks.ca.gov.

California Wilderness Coalition: The California Wilderness Coalition builds support for threatened wild places on a statewide level by coordinating efforts with community leaders, businesspeople, decision-makers, local organizations, policy-makers, and activists. CWC listed the Santa Clara River as one of the most threatened areas in California (California Wilderness Coalition 2004). For more information, visit them at http://www.calwild.org.

***California Wild Heritage Campaign**:* The mission of the California Wild Heritage Campaign is to ensure the permanent protection of California's remaining wild public lands and rivers. Congresswoman Hilda Solis has introduced the Southern California Wild Heritage Act. The bill will significantly expand the National Wild & Scenic Rivers System and the National Wilderness Preservation System on federally managed public lands in Southern and Central California. A total of 13 new Wild & Scenic Rivers are included in the bill, totaling more than 312 miles, and 47 new Wilderness Areas and Wilderness Additions totaling 1,686,393 acres. Two of the proposed Wilderness Areas are associated with the Linkage Design, Magic Mountain (12,080 ac) and Santa Clarita Woodlands (4,200 ac). The Campaign builds support for wilderness and wild & scenic river protection by compiling a detailed citizen's inventory of California's remaining wild places; organizing local communities in support of those places; building a diverse, broad-based coalition; and educating the general public, government officials and the media about the importance of protecting California's wild heritage. For more information on the status of the Act, visit http://www.californiawild.org.

City of Santa Clarita's River Corridor Plan: The City of Santa Clarita is concentrated on land acquisition along the river to develop a park and trail system; the regional river trail serves as the backbone of the trail system. The City hosts an Annual River Rally to highlight the importance of natural habitats along the Santa Clara River. The City's recent purchase in Bee Canyon was a critical acquisition in the Linkage Design. The City adopted policies on Managed

Growth and Open Space Acquisition in 2002 that discuss creation of an open space buffer surrounding the City; open space in the Linkage Design is consistent with those adopted policies. For more information on the City's programs, go to http://www.santa-clarita.com.

County of Los Angeles: Los Angeles County is currently engaged in a 2025 General Plan update, which will likely include proposed revisions and expansions to existing Significant Ecological Areas (SEA). The segment of the Linkage Design that falls within Los Angeles County has been proposed as part of the Santa Clara River SEA (PCR 2000), which includes several important wildlife movement areas. Two other SEAs also occur in the vicinity of the linkage, Cruzan Mesa and the Santa Susana-Simi Hills. The General Plan update also provides an opportunity to ensure zoning in the Linkage Design is conducive to conserving linkage function. For more information on the General Plan update go to http://www.planning.co.la.ca.us.

County of Los Angeles, Department of Parks and Recreation: Los Angeles County also manages Vasquez Rocks Natural Area Park, a key protected area in the Linkage Design. This 745-acre park of unique geological rock formations is located north of SR-14 in the high desert near Agua Dulce Springs. The park features important biological and cultural resources. Working with the Department of Parks and Recreation will be critical to implementing the Linkage Design. For more information, visit them at http://www.parks.co.la.ca.us.

Environment Now: Environment Now is an active leader in creating measurably effective environmental programs to protect and restore California's environment. Since its inception, they have focused on the preservation of California's coasts and forests, and reduction of air pollution and urban sprawl. Environment Now uses an intelligent combination of enforcement of existing laws, and application of technology and process improvements to eliminate unsustainable practices. To find out more about their programs, visit their website at http://www.environmentnow.org

Friends of the Santa Clara River: The Friends have been actively engaged in with watershed activities along the length of the river with a focus on the protection, enhancement, and management of the river's resources. The Friends are involved in several efforts including planning activities, habitat management, habitat restoration, and public education and outreach regarding the resource values of the river. The Friends own and manage a 230-acre river terrace property near the city of Santa Paula with over a mile of river frontage called the Hedrick Ranch Natural Area. Visit their website for more information at http://www.FSCR.org.

Heal the Bay: Founded in 1985, Heal the Bay works to make Santa Monica Bay and Southern California coastal waters safe and healthy for people and marine life. To reach their goals, they use research, education, community action and policy programs. Heal the Bay's science and policy experts engage in reviewing and commenting on countless discharge permits; testifying before the L.A. and California water quality boards on laws & enforcement; acting as a technical advisor, member, and/or leader on numerous task forces and project committees; and working with elected officials to author laws and enable projects to improve water quality. To find out more about Heal the Bay, visit them at http://www.healthebay.org.

Los Angeles County Aquatic Resource In-Lieu Fee Mitigation Program: The purpose of this program is to provide a voluntary alternative compensatory mitigation option that results in better designed and managed aquatic resource restoration projects. Program funds may be used for activities directly related to aquatic habitat creation, restoration, or enhancement, to include exclusively the following activities: land acquisition; purchase of easements, purchase of water rights; development of mitigation and monitoring plans; permit fees; implementation of

mitigation and monitoring plans; administrative costs; and long-term management of mitigation parcels. For more information: http://www.spl.usace.army.mil/regulatory/pn/200200035.pdf.

National Park Service The purpose of the National Park Service is "...to promote and regulate the use of the...national parks...which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." The National Park Service recently secured land in the Linkage Design, along the Pacific Crest Trail, on both sides of SR-14. NPS is a partner in the South Coast Missing Linkages Project. For more on the National Park Service, see http://www.nps.gov.

Pacific Crest Trail Association: The mission of the Association is to protect, preserve and promote the Pacific Crest National Scenic Trail so as to reflect its world-class significance for the enjoyment, education and adventure of hikers and equestrians. The Association works to: promote the Pacific Crest National Scenic Trail as a unique educational and recreation treasure; provide a communications link among users and land management agencies; and assist the U.S. Forest Service and other agencies in the maintenance and restoration of the Pacific Crest National Scenic Trail. The Pacific Crest Trail crosses through portions of the Linkage Design and may be helpful in directing federal funds to secure land in the linkage. To find our more about the Association, visit them at http://www.pcta.org.

Regional Water Quality Control Board: The State WQCB strives to preserve, enhance and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations. The RWQCB oversees waters in the Linkage Design area. Mint Creek, a tributary to the Santa Clara River, is one of the first Total Maximum Daily Load (TMDL) planning efforts undertaken in the state to identify sources of pollutants and restore water quality for an impaired water body. Other impaired water body listings in the Santa Clara Watershed include the stretches of the Santa Clara River, the Santa Clara River estuary, and Bouquet Creek. For more information, visit their website at http://www.swrcb.ca.gov.

Resource Conservation Districts (RCD): The federal district has two offices with responsibilities in the Linkage Design area, the Antelope Valley RCD and Ventura RCD. This non-profit agency supports conservation of natural ecosystems through programs that reduce the effects of on-going land-use practices on the environment. A major portion of their effort is to advise residents on the management of soil, water, soil amendments and other resources used for agriculture and home gardening. RCDs are supported by state and local grants. They provide leadership in partnership efforts to help people conserve, maintain, and improve our natural resources and environment. Programs include Emergency Watershed Protection, Environmental Quality Incentives, Resource Conservation and Development, Soil Survey Programs, Soil and Water Conservation Assistance, Watershed Protection, River Basin, and Flood Operations, Wetlands Reserve & Wildlife Habitat Incentives. They do not enforce regulations but instead serve the interests of local residents and businesses. To find out more about their programs, go to http://www.carcd.org.

San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy: The Rivers and Mountains Conservancy is a state agency working to create a Parkways and Open Space Plan for the San Gabriel River and lower Los Angeles River watersheds. The RMC works to preserve open space and habitat for present and future generations. To fulfill that mission, the RMC is engaged in multiple projects that provide low-impact recreation, education, wildlife and habitat restoration, and watershed improvements. The RMC is actively engaged in conservation

planning efforts in the Linkage Design area. To find out more about the RMC, visit their website at http://www.rmc.ca.gov.

Santa Clara River Enhancement and Management Plan: The purpose of the SCREMP is to provide a guidance document that addresses the preservation, enhancement, and sustainability of resources for the entire length of the river, encompassing all land within the 500-year floodplain. The plan identifies land in the Linkage Design as having significant regional conservation value and calls for maintaining existing habitat values and river channel connectivity (AMEC 2004). The plan developed from a highly collaborative process that involved numerous stakeholders that is coordinated by the Ventura County Watershed Protection District and Los Angeles County Department of Public Works. The plan may provide opportunities for protecting land along the river in the Linkage Design area. The plan can be viewed at http://sdgis.amec.com/scremp/index.htm.

Santa Clara River Trustee Council: The Santa Clara River Trustee Council, made up of representatives from the U.S. Fish and Wildlife Service and the California Department of Fish and Game, is administering $1.5 million to fund ecological restoration projects in the Santa Clara River watershed in Ventura and Los Angeles counties. Ecological restoration projects include habitat improvement, and ecological research, monitoring, and educational efforts associated with habitat restoration. The funds are from the settlement of claims for natural resource damages resulting from an ARCO pipeline oil spill into the Santa Clara River. Several projects have been proposed that would contribute to the protection and restoration of habitats in the Linkage Design. For more information on the Council, visit http://www.ventura.fws.gov/SCRiverPlan/SCR.

Santa Clarita Organization for Planning the Environment (SCOPE): SCOPE has been engaged in educating the public about planning and environmental issues in the Santa Clarita Valley, including those involving the river. SCOPE informs the public about environmental and planning projects in the SCV, and takes action to promote the quality of life in the Santa Clarita Valley. More information about this group can be found at their website http://www.scope.org.

Santa Monica Mountains Conservancy: This state agency was created by the Legislature in 1979 and is charged with the primary responsibility for acquiring land with statewide and regional significance. Through direct action, alliances, partnerships, and joint powers authorities, the Conservancy's mission is to strategically preserve, protect, restore, and enhance treasured pieces of Southern California's natural heritage to form an interlinking system of parks, open space, trails, and wildlife habitats that are easily accessible to the general public. The Conservancy manages parkland in both the Castaic (i.e., Sierra Pelona) and San Gabriel (i.e., Santa Clarita Woodlands) protected core areas. They also manage land in the surrounding ranges, in the Santa Monica Mountains, Simi Hills, and Santa Susana Mountains as part of their Rim of the Valley Trail Corridor plan. The SMMC is a partner in the South Coast Missing Linkages effort. For more information on SMMC, visit them at http://www.smmc.ca.gov.

Sierra Club's Santa Clara River Greenway Campaign: The stated goal of this effort is to bring the entire 500-year floodplain of the river from Fillmore to Acton into public ownership and protection. The campaign has identified a number of protection needs including water quality and quantity, plant and wildlife species habitats, movement corridors for wildlife, open space attributes and aesthetics, river fluvial dynamics, and agricultural resources. For more information on the Sierra Club's campaigns, go to http://www.sierraclub.org.

South Coast Wildlands: South Coast Wildlands is a non-profit group established to create a protected network of wildlands throughout the South Coast Ecoregion and is the key

administrator and coordinator of the South Coast Missing Linkages Project. For all 15 priority linkages in the Ecoregion, South Coast Wildlands supports and enhances existing efforts by providing information on regional linkages critical to achieving the conservation goals of each planning effort. For more information on SCW, visit their website at http://www.scwildlands.org.

***South Coast Missing Linkages Project*:** SCML is a coalition of agencies, organizations and universities committed to conserving 15 priority landscape linkages in the South Coast Ecoregion. The project is administered and coordinated by South Coast Wildlands. Partners in the South Coast Missing Linkages Project include but are not limited to: The Wildlands Conservancy, The Resources Agency California Legacy Project, California State Parks, California State Parks Foundation, United States Forest Service, National Park Service, Santa Monica Mountains Conservancy, Conservation Biology Institute, San Diego State University Field Station Programs, The Nature Conservancy, Environment Now, and the Zoological Society of San Diego Center for Reproduction of Endangered Species. For more information on this ambitious regional effort, go to http://www.scwildlands.org/pages/sc_missinglinks.php.

Southern California Wetlands Recovery Project: The Southern California Wetlands Recovery Project is a partnership of public agencies working cooperatively to acquire, restore, and enhance coastal wetlands and watersheds between Point Conception and the International border with Mexico. Using a non-regulatory approach and an ecosystem perspective, the Wetlands Project works to identify wetland acquisition and restoration priorities, prepare plans for these priority sites, pool funds to undertake these projects, implement priority plans, and oversee post-project maintenance and monitoring. The goal of the Southern California Wetlands Recovery Project is to accelerate the pace, the extent, and the effectiveness of coastal wetland restoration in Southern California through developing and implementing a regional prioritization plan for the acquisition, restoration, and enhancement of Southern California's coastal wetlands and watersheds. The Wetlands Project is actively engaged in many activities in the Santa Clara Watershed. For more information on this exciting project, visit their website at http://www.coastalconservancy.ca.gov/scwrp.

***The Nature Conservancy*:** TNC preserves the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. The Nature Conservancy has undertaken significant conservation planning efforts in the Santa Clara watershed, including conserving properties along the main stem of the Santa Clara River. TNC is actively acquiring land and conservation easements in the river floodplain, having conserved over 1,000 acres thus far. TNC has also partnered with the National Oceanic and Atmospheric Administration's (NOAA) "Community-Based Restoration Program" to help promote southern steelhead recovery and sustainable fisheries. TNC is a partner in the South Coast Missing Linkage Project. For more information on their activities, go to http://www.tnc.org.

***Trust for Public Land*:** The Trust for Public Land conserves land for people to enjoy as parks, gardens and other natural places, ensuring livable communities for generations to come. TPL's Western Rivers Program works to reestablish and protect the natural function of river systems. TPL has protected over 30,000 acres of river, wetland, and watershed lands in California. For more information on their efforts, go to http://www.tpl.org.

The Wildlands Conservancy: The Wildlands Conservancy is a non-profit, member-supported organization dedicated to land preservation, river preservation, trail development and environmental stewardship through education. Their Save the Saints Program brings together multiple land trusts and conservancies to identify key lands for acquisition within National Forest boundaries and lands contiguous with the Forests in the Santa Ana, San Gabriel, San Jacinto,

and San Bernardino Mountains. TWC is a vital partner in the South Coast Missing Linkages project. For more information, please visit their website at http://www.wildlandsconservancy.org.

***US Army Corps of Engineers*:** The mission of the ACOE is to provide quality, responsive engineering services for planning, designing, building and operating water resources and other civil works projects (Navigation, Flood Control, Environmental Protection, Disaster Response, etc.). They recently completed a Reconnaissance Study of the Santa Clara River Watershed to determine federal interest in completing a Feasibility Study for a Santa Clara River Watershed Protection Plan that would cover the entire watershed. This plan would involve an assessment of historic and current conditions and involve modeling of various future scenarios to evaluate watershed processes and riparian system integrity. The results would be used to better understand how land use affects water flow and quality. Watershed planning efforts such as this may provide opportunities for restoration of natural water flow and riparian vegetation in the linkage. The goals of the project are to involve state, federal, and local stakeholders in establishing protection and management areas for activities regulated under the 404 permitting process. For more information, go to http://www.usace.army.mil.

US Fish and Wildlife Service: The U.S. Fish & Wildlife Service works to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. The agency can provide support for prosecuting violations to the Endangered Species Act, law enforcement, permits, and funding for research on threatened and endangered species. USFWS has developed recovery plans for several threatened or endangered species that occur or have the potential to occur in the Linkage Design area: California condor (*Gymnogyps californianus*) arroyo toad (*Bufo* microscaphus), California red-legged frog (*Rana aurora draytonii*), California gnatcatcher (*Polioptila californica californica*), southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo belli pusillus*), and vernal pools. The Santa Clara River is also listed as a potential recovery watershed for southern steelhead trout. The federal Endangered Species Act as amended (16 U.S.C. 1534) authorizes USFWS to acquire lands and waters for the conservation of fish, wildlife, or plants with the Land and Water Fund Act appropriations. The added protection provided by the Endangered Species Act may also be helpful for protecting habitat in the linkage from federal projects. For more information, visit their website at http://www.fws.gov.

US Fish and Wildlife Service Partners for Fish & Wildlife Program This program supplies funds and technical assistance to landowners who want to restore and enhance wetlands, native grasslands, and other declining habitats, to benefit threatened and endangered species, migratory birds, and other wildlife. This program may be helpful in restoring habitat on private lands in the Linkage Design. For more information on this Program, please go to http://partners.fws.gov.

US Forest Service: The mission of the USDA Forest Service is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations. The four southern California Forests (Los Padres, Angeles, San Bernardino, and Cleveland) are in the process of jointly revising their Resource Management Plans. The biological importance and feasibility of connecting the four forests to the existing network of protected lands in the region is being evaluated in the Draft Environmental Impact Statement. The USFS is allocated Land and Water Conservation Funds annually, which are designed to protect recreational open space, watershed integrity, and wildlife habitat and may be a source of funds for protecting land in the planning area. The Forest Service is taking a proactive role in habitat connectivity planning in the region as a key partner in the South Coast Missing Linkages Project. For more information, go to http://www.fs.fed.us/r5/scfpr.

US Geological Survey, Biological Resources Division: The Biological Resource Division (BRD) works with others to provide the scientific understanding and technologies needed to support the sound management and conservation of our Nation's biological resources. BRD develops scientific and statistically reliable methods and protocols to assess the status and trends of the Nation's biological resources. BRD utilizes tools from the biological, physical, and social sciences to understand the causes of biological and ecological trends and to predict the ecological consequences of management practices. BRD enters into partnerships with scientific collaborators to produce high-quality scientific information and partnerships with the users of scientific information to ensure this information's relevance and application to real problems. BRD is engaged in several research projects in the Santa Clara Watershed, mostly on U.S. Forest Service land. For more information, go to http://www.biology.usgs.gov.

Ventura Coast Keepers/Wishtoyo Foundation: The Ventura Coastkeeper is affiliated with the National Waterkeeper Alliance, dedicated to protecting, preserving and restoring marine habitat, coastal waters, and watershed integrity. The Keeper organizations fill the gap between water pollution laws and the government's ability to enforce them. Wishtoyo is a Native American organization that utilizes traditional Chumash cultural values and practices to foster environmental awareness. For more information please visit them at http://www.wishtoyo.org.

Zoological Society of San Diego: The Applied Conservation Division of the Society's Center for Reproduction of Endangered Species is working to conserve natural habitats and species in southern California, as well as other parts of the world. For example, the Applied Conservation Division supports conservation of southern California ecosystems through seed banking of endangered plant species, and ongoing studies of local birds, reptiles, and mammals and their habitats. For more information on ZSSD, go to http://www.sandiegozoo.org.

Proximity to other federal, state, or private conservation ownerships: Although, there is currently a 6 to 10-mile break in connectivity between the Saugus and Tujunga Ranger Districts of the Angeles National Forest, the landscape still retains high habitat values and opportunities remain for restoring functional habitat connectivity between these significant blocks of public land. Threats to natural habitats in the linkage itself have been recognized by federal, state, and local agencies and non-governmental organizations that have launched a variety of successful planning efforts. As a result, a number of stepping-stones of secured habitat exist in the linkage. The Bureau of Land Management administers land throughout the linkage planning area in Soledad, Long, Bobcat, Young, Hughes, Escondido, Tapie, Tick, and Mint canyons. Los Angeles County manages two natural areas, Vasquez Rocks and Placerita Canyon, and has proposed three Significant Ecological Areas in the planning area (i.e., Santa Clara River, Cruzan Mesa, and Santa Susana/Simi Hills), as part of their General Plan update. The Santa Monica Mountains Conservancy also manages land in the planning area in Towsley, Elsmer and Whitney Canyons. The City of Santa Clarita recently acquired land in Bee Canyon. Finally, the National Park Service recently secured land along the Pacific Crest Trail. The value of already protected land in the region for biodiversity conservation, environmental education, outdoor recreation, and scenic beauty is immense, but it can be irrevocably degraded if these remaining wildlands become disconnected.

Value to other conservation-oriented landholdings in the region: The San Gabriel-Castaic Linkage is one of 15 critically important landscape linkages that must be conserved if ecological and evolutionary processes are to continue operating in the South Coast Ecoregion, as they have for millennia. As such, the value to other conservation landholdings is immense, as the linkage serves to connect two districts of the Angeles National Forest that are fundamentally part of the same ecological system. Furthermore, all conservation-oriented landholders in the region will benefit from the connection of their isolated islands of habitat to protected habitat.

These benefits are far-reaching and not only include landholders in the linkage (U.S. Forest Service, Bureau of Land Management, Los Angeles County Parks, City of Santa Clarita), but also those benefiting regionally from the connection.

Long-term prospects for this property's ecological viability based on surrounding land use patterns: The long-term prospects for the ecological viability of habitats in the linkage are excellent once protected, though parcels on the perimeter may be more susceptible to edge effects. Ultimately, conservation of the linkage is critical to ensure the ecological viability of species and habitats in both the San Gabriel and Castaic Ranges. Development pressure is intense in and adjacent to the City of Santa Clarita, while ranchette style development is the primary concern in the linkage. As such, priority should be given to parcels between existing protected areas that have a good chance of remaining connected via linkage habitats conserved through collaborative projects with a wide variety of interested agencies.

5. MANAGEMENT OBJECTIVES

Management of protection of the open preserved land will be achieved by means of two strategies. In the short term, existing agencies such as the Mountains Recreation Conservation Authority (MRCA) or The Nature Conservancy (TNC) will assist in providing for operation and maintenance of the acquired properties. Both MRCA and TNC currently perform this function for preserved land and agreements are being pursued for the proposed CAPP. In the long term it is anticipated that a local land trust will be established in the upper watershed. This entity will be a partnership between the community and agencies and will assume the development and management of the CAPP as well as promotion of conservation goals for the Santa Clara watershed as a whole.

5.1 Conservation, protection, restoration, and/or enhancement of species, habitats, or communities (including connective corridors): Protecting and restoring functional connectivity will help to maintain ecological interactions among species, habitats, and entire natural communities. The linkage provides live-in and move-through habitat for countless native species. However, 5 types of features currently impede species movements through the linkage to varying degrees: roads, railroads, impediments to stream flow, industrial operations, and rural residential development. Although these comprise only a small portion of the linkage, their adverse effects on species movements are disproportionately large, and ameliorating them is essential to maintain or restore functional linkages (Penrod et al. 2004). Please see Appendix C, A Linkage Design for the San Gabriel-Castaic Connection for specific recommendations. Some examples of strategies intended to meet this management objective include:

- Encourage transportation agencies to use road improvement projects as opportunities to replace inadequate crossing structures with ecological infrastructure.
- Install specialized culverts and bridges in streams to address outfall height, water velocities, and water depth for adequate upstream fish passage (Carey and Wagner 1996, Evink 2002).
- Pursue cooperative programs with landowners to improve conditions in riparian and upland habitats on private land in the linkage.

5.2 Re-introductions of species or restoration of degraded habitats: As indicated elsewhere in this submittal, opportunities for restoration of disturbed habitat will be pursued. An additional function of a local land trust will be to develop a strategic plan for conservation and restoration as well as the pursuit of funding sources for such efforts. Acquisition of parcels within the flood plain and associated restoration of channels and terrace vegetation communities will be a priority for this plan.

5.3 Public use and access (from hunting to interpretive functions to exclusion): Public use of the CAPP area will be consistent with habitat, wildlife connectivity and species recovery plans. It is expected that passive recreation such as trails, interpretive centers and rest areas will be part of the proposed uses. Public use will also be consistent with the guidelines for funding sources used for the CAPP.

5.4 Estimate of how many users for each type of use: At this time is difficult to estimate the number of users but this will be established based upon the criteria outlined above.

5.5 Management strategies that will implement or, at least, promote partnerships and/or multi-interest stewardship programs (e.g., NCCPs, CRMPs, HCPs): The evolution and promotion of the proposed CAPP has resulted from the efforts of a multi-agency/community working group comprised of the following:

Federal Partners:	Bureau of Land Reclamation Natural Resources Conservation Service Southern California Wetlands Recovery Project USDA Forest Service, Angeles National Forest US Fish and Wildlife Service
State Partners:	Caltrans Department of Fish and Game Regional Water Quality Control Board Rivers and Mountains Conservancy Santa Monica Mountains Conservancy Wildlife Conservation Board
Local Partners:	City of Santa Clarita Los Angeles County DPW, Watershed Division
Community Partners:	Friends of the Santa Clara River South Coast Wildlands The Nature Conservancy Trust for Public Land

It is anticipated that this group will continue to participate in the implementation of the proposed CAPP and will play a formative role in establishing a local land trust. While the recent focus of this group has been centered on the development of the CAPP, the group has been concurrently working on outreach to Los Angeles County planners and to the local communities to promote watershed and conservation awareness. It is intended that these efforts will continue and that through coordination with planners and regulatory agencies, the focus of the group will broaden to embrace not only the conservation and connectivity of open space in the upper watershed but also the Santa Clara Watershed as a whole. Coordination with both State and non-profit conservation entities will greatly assist in this effort, providing leverage that will further the goals of conservation of biodiversity and watershed protection.

5.6 When a conservation easement is the means of acquisition, specific terms of management practices or limitations that should be written into the easement: Where possible, to maximize available funds, acquisition of conservation easements will be pursued in favor of fee acquisition. However, due to the number of parcels involved in the proposed CAPP, each acquisition will have to be assessed based upon the CAPP criteria already established. Where conservation easements are employed, consideration will be given to such factors as

appropriate fencing, lighting, buffer zones or construction setbacks, noise levels, potential for disturbance of the hydrology, and safety. Apart from residential equestrian land use, agriculture or wood extraction does not occur as a land use in the CAPP.

6. FINANCIAL INFORMATION

The properties targeted for acquisition or conservation easements consist of 392 parcels in Los Angeles County (Attachment 4). Please see Appendix F, for detailed parcel level financial information (e.g., property owners, contact information, land value). Due to the sheer magnitude of properties in the proposed CAPP, information requested on the method of protection (*e.g.*, fee title by Department, purchase of a conservation easement, or approving a grant to another agency) is not provided for every parcel under consideration. However, according to the parcel data, 62 of the 392 parcels have structures on them. Conservation easements would likely be the most appropriate method of protection for these parcels. Several conservation partners will be engaged in acquiring or protecting land to implement the San Gabriel-Castaic Linkage, in addition to the Department, including, but not limited to:

- National Park Service
- U.S. Forest Service
- Bureau of Land Management
- City of Santa Clarita
- Santa Monica Mountains Conservancy
- The Nature Conservancy
- Trust for Public Land

The Nature Conservancy, Santa Monica Mountains Conservancy, U.S. Forest Service, and National Park Service have already initiated contacts with several landowners in the proposed Conceptual Area. USFS plans for realignment of the Pacific Crest Trail involves acquisition of parcels within the CAPP area. Their management plan for these parcels is compatible with the goals of the proposed CAPP.

7. CULTURAL RESOURCES

No historical or archeological sites are known on the targeted parcels. However, because portions of the Santa Clara River are within the Conceptual Area there is a possibility that such resources exist. It is suggested that surveys be conducted on suspect parcels prior to acquisition.

8. HAZARDOUS MATERIALS

No historical usage or dumping of hazardous materials is known on the targeted properties. It is suggested that Phase I hazardous materials assessments be conducted on suspect parcels prior to acquisition.

9. LOCAL AND REGIONAL ISSUES

9.1 Project Support: The proposed CAPP is strongly supported by land managers and planners, regulatory agencies, and several conservation organizations. All entities that manage land for conservation in the linkage (e.g., BLM, USFS, Los Angeles County, City of Santa Clarita) are enthusiastic about implementing the proposed CAPP. All participants in the Upper Santa Clara Watershed Biodiversity Working Group are in support of the project. Project partners in the South Coast Missing Linkages project are ecstatic about the opportunity to

implement portions of the Linkage Design for the San Gabriel-Castaic Connection. Regulatory Agencies, such as U.S. Fish and Wildlife Service and California Department of Fish and Game also support securing this critical landscape level linkage. Agencies and organizations in support of the proposed CAPP include:

Federal agencies in support of the proposed CAPP include: U.S. Fish and Wildlife Service, U.S. Forest Service, Bureau of Land Management, National Park Service, Bureau of Land Reclamation, Natural Resources Conservation Service, and Southern California Wetlands Recovery Project.

State Agencies in support of the project include: The Resources Agency California Legacy Project, California Department of Fish and Game, California State Parks, Caltrans, Santa Monica Mountains Conservancy, Rivers and Mountains Conservancy, and the Regional Water Quality Control Board.

Local Agencies that support the CAPP include: County of Los Angeles Department of Parks and Recreation, City of Santa Clarita, and the Watershed Division of Los Angeles County Department of Water and Power.

Conservation Organizations that support implementation of the San Gabriel-Castaic Linkage include: The Nature Conservancy, Trust for Public Land, South Coast Wildlands, The Wildlands Conservancy, Environment Now, Sierra Club, California Native Plant Society, Ventura Coast Keepers, Heal the Bay, and Friends of the Santa Clara River.

9.2 Senate and Assembly District representatives:

17th State Senatorial District
Senator William Knight
25709 Rye Canyon Road, Suite 105
Santa Clarita, CA 91355
(661) 294-8184

20th State Senatorial District
Senator Richard Alarcon
6150 Van Nuys Blvd., Suite 400
Van Nuys, CA 91401
(818) 901-5588
(916) 445-7928

36th State Assembly District
Assemblywoman Sharon Runner
747 West Lancaster Boulevard
Lancaster, CA 93534

37th State Assembly District
Assemblyman Tony Strickland
2659 Townsgate Road, Suite 236
Westlake Village, CA 91361

38th State Assembly District
Assemblyman Keith Richman
10727 White Oak Avenue, Suite 124

Granada Hills, CA 91344

39th State Assembly District
Assemblywoman Cindy Montanez
11541 Laurel Canyon Blvd, Suite C
Mission Hills, CA 91345

59th State Assembly District
Assemblyman Dennis Mountjoy
135 West Lemon Avenue, Suite A
Monrovia, CA 91016

10. THREATS

Southern California's remaining wildlands form an archipelago of natural open space thrust into one of the world's largest metropolitan area within a global hotspot of biological diversity. These wild areas are naturally interconnected; indeed, they historically functioned as one ecological system. However, recent intensive and unsustainable activities threaten to sever natural connections, forever altering the functional integrity of this remarkable natural system. The ecological, educational, recreational, and spiritual impacts of such a severance would be substantial.

The linkage is imminently threatened by high-density urban development spreading eastward from the City of Santa Clarita, with massive new developments proposed almost weekly. Rural residential development in the communities of Aqua Dulce and Acton has also created choke points to wildlife movement, though these areas remain somewhat permeable. However, groundwater extraction creates additional obstacles to movement, especially for aquatic and semi aquatic organisms that rely on surface water and well-developed riparian vegetation.

Aggregate mining in and adjacent to the Santa Clara River in Soledad Canyon has already had tremendous impacts on the natural resources of the watershed. The existing mining lease is to be terminated within the next decade and the habitat restored to a semblance of its former grandeur. However, another massive mining project has been proposed in the linkage planning area that would extract 78 million tons of sand and gravel over the next 20 years; the project is currently in litigation. Fortunately, legislation has been introduced by U.S. Senator Barbara Boxer that would terminate two mining leases in Soledad Canyon and prohibit the issuance of any future mining leases for sand and gravel in Soledad Canyon. Congressman Buck McKeon introduced the House version of this bill (H.R. 3529). The City of Santa Clarita recently purchased this property, though not the mineral rights, to bolster their chances of stopping this project in order to protect residents from further degradation of air and water quality and increased traffic congestion.

It has been estimated that over 90% of the historic riparian habitat in Southern California has been eliminated (Dennis et al. 1984, Bell 1997). In Los Angeles County, over 97% of the wetlands once present are now gone, and the wetland and riparian communities remaining are intensely threatened. This significant loss of habitat has been accompanied by a decline in wildlife populations that depend wholly or in part on riparian systems. Whereas millions of dollars are being spent to restore the Los Angeles and San Gabriel Rivers, which are lined with concrete from the mountains to the sea; the Santa Clara River is still wild, supporting a diversity of species, and providing a multitude of ecosystem services that should be maintained.

11. CONTACT PERSON(S) IN REGION

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South Coast Wildlands
PO Box 1102
Idyllwild, CA 92549-1102
kristeen@scwildlands.org
909/659-9946

Scott Harris
California Department of Fish and Game
spharris@dfg.ca.gov
818-360-8140

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